

Notice of Allowability	Application No.	Applicant(s)	
	10/043,791	ASSARABOWSKI ET AL.	
	Examiner	Art Unit	
	Dah-Wei D Yuan	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/10/04.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 11 January 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Art Unit: 1745

**METHOD AND APPARATUS FOR PREVENTING WATER IN FUEL CELL
POWER PLANTS FROM FREEZING DURING STORAGE**

Examiner: Yuan

S.N. 10/043,791

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June 17, 2004

Detailed Action

1. The Applicant's amendment filed on May 10, 2004 was received. Claims 8,11 were amended.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on February 20, 2004.

Claim Rejections - 35 USC § 103

3. The claim rejections under 35 U.S.C. 103(a) as obvious over Acker and Gebhardt et al. on claims 1,4-6,11,13,14,16-18 are withdrawn because Applicant's arguments are persuasive. The preamble of the claims 1 and 11 recites "A keep-warm system to provide freeze protection for a fuel cell power plant", which, as admitted by the Applicant, is understood as an apparatus having a structure for maintaining a fuel cell system from freezing over an extended period of time. The instant disclosure teaches a keep-warm system for a fuel cell power plant prevents freeze-sensitive portions of the power plant from freezing under extreme cold external temperatures during extended storage periods. See Abstract. The claim rejections under 35 U.S.C. 103(a) as obvious over Acker, Gebhardt et al. and Tomomura et al. on claims 2,3,7,12,15,20 are withdrawn because Applicant's arguments are persuasive.

Reasons for Allowance

6. Claims 1-20 are allowed. The invention of independent claims 1,11 recites a keep-warm system to provide freeze protection for a fuel cell power plant comprising a fuel cell stack assembly, a fuel supply means, a source of oxidant reactant, a water management system, a thermal insulating means enclosing at least one of the fuel cell stack assembly and the water management system for providing thermal insulation thereof, and a catalytic fuel burner means to supply heated gas into the thermal insulating enclosure means, and to the at least one of the fuel cell stack assembly and the water management system, thereby to prevent freezing of water in freeze-sensitive parts of the fuel cell power plant. The closest prior art of record, Acker, only teach the use of a fuel cell system to provide enhanced air purification for mobile and residential applications. Acker does not teach the use of a catalytic fuel burner means and a thermal insulating means to prevent freezing of water in freeze-sensitive parts of the fuel cell system. Gebhardt et al. only teach the use of a catalytic burner to generate a surge of exothermic heat during cold-start of a fuel cell system. The invention of independent claim 8 recites a method of preventing freezing of water in a fuel cell power plant during shutdown comprising the steps of (a) selectively flowing fuel and oxidant to a catalytic fuel burner to provide heated gas during shutdown; (b) convectively flowing the heated gas into fuel cell power plant; and (c) thermally insulating the parts of the fuel cell power plant including the heated gas flowing in heat transfer relation therewith. The closest prior art of record, Acker, does not teach the use of a catalytic fuel burner to provide heated gas during shutdown and thermally insulating the freeze-sensitive parts of the fuel cell by

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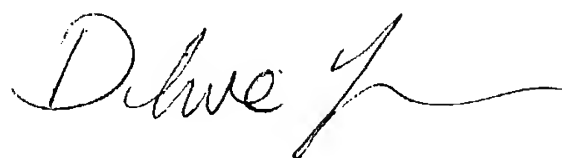
using the heated gas flowing in heat transfer relation therewith. Gebhardt et al. only teach the use of a catalytic burner to generate a surge of exothermic heat during cold-start of a fuel cell system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan
June 18, 2004

A handwritten signature in cursive script, appearing to read "Dahwei Yuan", followed by a long horizontal flourish.